



## Northward range expansions in the Upper Columbia Basin Network: The northern mockingbird and the ringtail



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Figure 1. Northern mockingbird in the Clarno Unit of John Day Fossil Beds National Monument, Oregon. Documentation of nesting by mockingbirds in 2002 and 2005 at the park confirms northern expansion of this species' range, which has since extended into eastern Washington.

For the second time in four years, a nesting pair of northern mockingbirds (*Mimus polyglottos*, fig. 1) was found in the Clarno Unit of the John Day Fossil Beds National Monument in 2005. The brilliant nocturnal singing and wing-flashing of the territorial male was conspicuous and foreign sounding in the dry canyon northwest of the monument headquarters in Kimberly, Oregon. The 2002 nesting event, documented during the monument's biological inventory, was the northernmost Oregon record for that species. But the mockingbird has continued its northward march and several breeding pairs have been found as far north as eastern Washington in recent years. An examination of breeding bird survey and atlas results for the region provides clear evidence that the species is expanding its range northward into the Pacific Northwest.

*"Range expansion can signal changes in habitat resulting from human-caused factors."*

Another less certain but potential range expansion example in the region is the case of the ringtail (*Bassariscus astutus*), a secretive and nocturnal raccoon-like mammal. In March 2003, a dead ringtail was found in the Castle Rocks Interagency Recreation Area near City of Rocks National Reserve in southern Idaho. This remains the first and only record for the species in the state. However, tracks tentatively identified to the species were found in snow in February 2005 and a well-described ringtail sighting was also reported by a park visitor in May 2006. Through the support of an Idaho State Wildlife Grant, City of Rocks resource managers are using remote cameras to try to document other ringtails. Confirmation of a resident population in the reserve would add a significant northern extension to the species' known range. Though this could be the result of inadequate survey effort—a scenario in which the species has simply been overlooked—it could also indicate a real change in its distribution.

Conservation programs typically focus on declining species undergoing range contraction, but detecting and tracking range expansion of plants and animals are also important. Though this is most obvious for noxious "weedy" species, an equally significant

but often more subtle phenomenon can occur among “native” species. Range expansion can signal changes in habitat resulting from human-caused factors. A well-documented example of this is the movement of the brown-headed cowbird (*Molothrus ater*) out of the Great Plains with forest clearing and the spread of domestic livestock during the 19th and early 20th centuries as people settled former forestland. Northward range expansions may also signal a response to climate change. Warming temperatures have been implicated in several recent studies of latitudinal movements by butterflies and other invertebrates, and preliminary results from the Joseph Grinnell resurvey project in Yosemite National Park (California) suggests that mammals may also be responding to regional warming trends by moving up in elevation. Fossil records also provide clear evidence of climate-induced range expansion. The mockingbird is part of a group of several northward advancing bird species in the West including the white-tailed kite (*Elanus leucurus*) and the bronzed cowbird (*Molothrus aenus*). Though the connection between warming temperatures and species range expansion has been difficult to prove scientifically, it is certainly a plausible hypothesis and one worth monitoring over time.

National parks and other units of the National Park System make excellent reference sites to document changes in species distribution, and through the efforts of the NPS Inventory and Monitoring Program, the National Park Service is now positioned to make a significant contribution toward documenting and understanding contemporary range expansions.

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